



This series of plots illustrates the phases of matter at finite baryon density ( $\rho_B$ ) and charge density ( $\rho_C$ ). As the pairing strength between quark pairs in Superconducting Quark Matter (SQM) is increased from  $r_s = 0$  to  $r_s = 0.25$ , SQM becomes increasingly favored over Nuclear Matter (NM) and Normal Quark Matter (NQM). The dotted red lines correspond to the charge neutral equations of state which can be applied to Compact Stars. In each case the phase transition from NM to QM proceeds through one or more mixed phases as indicated. Within the triangular regions for the cases  $r_s = 0.1$  and  $0.15$  all three phases coexist in equilibrium.